

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-5 Cancelled

6. (Previously presented) An isolated polypeptide comprising the amino acid sequence as set forth in SEQ ID NO: 10.

7. (Previously presented) An isolated polypeptide comprising the amino acid sequence as set forth in SEQ ID NO: 11.

8-22 Canceled

23. (Withdrawn – Previously presented) A method of eliciting an immune response against a Tir-producing organism, comprising:

administering to a host an immunogen according to claim 62, thereby eliciting an immune response against the Tir-producing organism.

24-51 Cancelled

52. (Previously presented) A pharmaceutical composition comprising a polypeptide that comprises at least one of the amino acid sequences set forth in SEQ ID NO: 10 and SEQ ID NO: 11 in a pharmaceutically acceptable carrier.

53-59 Cancelled

60. (Previously presented) The polypeptide of claim 6 wherein the polypeptide is phosphorylated.

61. (Previously presented) The polypeptide of claim 6 wherein at least one tyrosine residue of the polypeptide is phosphorylated.

62. (Previously presented) A Tir polypeptide fragment comprising the amino acid sequence set forth in SEQ ID NO: 7.

63. (Previously presented) An immunogen comprising a Tir polypeptide fragment that comprises at least 8 consecutive amino acids of SEQ ID NO: 10 or SEQ ID NO: 11.

64. (Previously presented) The immunogen of claim 63 wherein the Tir polypeptide fragment comprises the amino acid sequence set forth in SEQ ID NO: 7.

65. (Previously presented) A fusion protein comprising a Tir polypeptide that comprises the amino acid sequence of SEQ ID NO: 10 or SEQ ID NO: 11 fused to a non-Tir protein sequence.

66. (Previously presented) The fusion protein of claim 64 wherein the fusion protein comprises a cleavage site located between the Tir polypeptide and the non-Tir protein sequence.

67. (Previously presented) The fusion protein of claim 65 wherein the non-Tir protein sequence is an immunoglobulin (Ig) Fc domain.

68. (Previously presented) The fusion protein of claim 65 wherein the non-Tir protein sequence is a marker polypeptide selected from the group consisting of an enzyme, a fluorescent protein, and a luminescent protein.

69. (Previously presented) An isolated Tir polypeptide comprising an amino acid sequence that is selected from the group consisting of (a) an amino acid sequence substantially identical to the sequence set forth in SEQ ID NO: 10, wherein the Tir polypeptide has at least one amino acid residue in SEQ ID NO: 10 substituted with a conservative amino acid; (b) an amino acid sequence substantially identical to the sequence set forth in SEQ ID NO: 10, wherein the Tir polypeptide has at least one amino acid deleted from or inserted into SEQ ID NO: 10; (c) an amino acid sequence that is substantially identical to the sequence set forth in SEQ ID NO: 11, wherein the Tir polypeptide has at least one amino acid residue in SEQ ID NO: 11 substituted with a conservative amino acid; and (d) an amino acid sequence that is

substantially identical to the sequence set forth in SEQ ID NO: 11, wherein the Tir polypeptide has at least one amino acid deleted from or inserted into SEQ ID NO: 11; and wherein the Tir polypeptide retains at least one Tir-specific activity.

70. (Previously presented) The Tir polypeptide of claim 69, wherein the at least one Tir-specific activity is selected from the group consisting of (a) the ability to bind to intimin; (b) the ability to nucleate actin in a host cell; and (c) the ability to activate a host cell signal transduction pathway.

71. (Previously presented) The Tir polypeptide of claim 69, wherein the at least one Tir-specific activity is the ability to specifically bind to a Tir-specific antibody.

72. (Currently amended) The Tir polypeptide of claim 69, wherein the at least one Tir-specific activity is the ability to induce an immune response in a host to an organism that produces a Tir polypeptide, wherein the organism that produces the Tir polypeptide is either enteropathogenic *E. coli* or enterohemorrhagic *E. coli*.

73. (Previously presented) The method of claim 23 wherein the immune response is a protective immune response.

74. (Previously presented) The method of claim 23 wherein the immunogen comprises a polypeptide comprising at least one of the amino acid sequences set forth in SEQ ID NO: 10 and SEQ ID NO: 11.